High-dimensional variable selection for GLMs and survival models

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Stellingen/Propositions

behorende bij het proefschrift/belonging to the thesis

High-dimensional Variable Selection for GLMs and Survival Models

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1. The basic idea underlying the dgLARS method is to use the differential geometrical structure of a GLM to generalize the LARS method (Chapter 2).
2. The dgLARS method can be extended to the high-dimensional GLMs based on the exponential dispersion models with arbitrary link functions (Chapters 2, 3).
3. The proposed predictor-corrector (IPC) algorithm significantly decreases the run times for computing the solution curve (Chapter 2).
4. A classical estimation of the unknown dispersion parameter ϕ based on high-dimensional feature space is proposed to make us able to do model selection (Chapters 2).
5. A new estimator of the dispersion parameter based on cross-validation (GRCV) is more accurate than the classical Pearson estimator (Chapters 3).
6. A principled method for sparse inference can be proposed in relative risk survival models, based on differential geometrical analyses of the high-dimensional likelihood surface (Chapter 4).
7. From now on, the `dglars` package can be applied to both discrete and continuous data with arbitrary link functions (Chapter 5).